The Training School **Bulletin**

"For the practicing professions concerned with mental retardation"

FEBRUARY, 1958

Part II

Method For Measuring Educability

Helen Schucman

Mentally Retarded and/or Aphasic

Bernard B. Schlanger

Sheltered Workshops Study

Bernard F. Niehm

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2. Non-technical articles of general interest, e. g., human interest stories of the mentally retarded, restatements of technical material for the layman.
3. Book reviews and news notes.
4. In special instances republication of important articles having limited distribution.

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COVER: Speech therapy at The Training School

THE TRAINING SCHOOL BULLETIN

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1 A. S.?

Without question, the implications which come from Sputnik being a fact are so far-reaching that time might well be counted from the date of its launching. Perhaps we are in what will be known some day as the year 1 A.S. (after Sputnik).

With its advent came the surging demand for more scientists and for more efficient finding of our better "future scientists" so that they might be trained early and be given all that was possible later in order that they might work more freely. The White House and our missile experts talk of money in the billions.

It was not long before groups supporting such causes as mental retardation grew concerned over the possible decrease of national and individual interest in those whose affection they had brought to the attention of so many of us. Articles appear daily in this vein.

Certainly, the mentally retarded cannot become the physicist necessary for the proper development of guided missiles. For that matter he might not even become the one who pushes the button on the automatic computer which will turn out fantastic answers in a few minutes.

Even B.S. (Before Sputnik) there were many jobs to which he could not be trained. What then can be said to support possible sagging interest in his plight? How can the retarded child be prevented from once again slipping back into the eternal shadows of lack of understanding and concern by others that was his lot until the past few years?

The first remarks must be philosophical rather than technical. When a nation's conscience permits a human being to be forgotten in its scheme of things so that he cannot develop to the fullest of his potentials and feel the joy of contributing something worthwhile (at least to him) to the common good, then that nation truly has begun a new era. The fundamental question at that point is whether we are to be concerned at all with the eventual hardening and crumbling of that nation's body and soul which will come as surely as another Sputnik.

More technical consideration looks toward the slow lifting of the veil of ignorance which has shrouded our knowledge of the causes of this mental inability and the recent first glimpses of possibilities of prevention which we have seen. The numbers of mentally retarded persons in the nation exceed by far those afflicted by heart, polio, or cancer. Whether one accepts minimum estimates of 3,000,000 or more inclusive estimates of 10-15,000,000 persons, the numbers are appalling. What a loss of manpower and good citizenship to the nation!

From this point of view the matter of prevention assumes far more import. Not alone from the comfort it would afford prospective parents, but also from the tremendous value the addition of these many worthwhile citizens would mean to the national economy, progressively larger expenditures for research leading to prevention are justified. Also, we must not overlook the fact that prevention is a step toward cure of those already born.

It would seem, therefore, that in light of the numbers involved, their potential value, and the need to maintain our traditional sense of spiritual values the limitations on monies spent on the mentally retarded at this time might be as short-sighted as has been the under-spending during past years on educating the best brains we have. The long term values are evident. Only short-sightedness can lead to misunderstanding our duty.

W. J.

A Method for Measuring Educability in Severely Mentally Retarded Children: A Preliminary Study

HELEN SCHUCMAN

This is the second of three articles describing an experiment in the educability of the severely mentally retarded child. The purpose, procedures, and subjects were discussed in Part I, printed in the November issue, Vol. 54, No. 3; Part II presents and discusses the results. The summary, conclusions, and implications will be given in Part III.

PART II

Presentation and Discussion of the Results

The experimental data of this study consisted of scores from a battery of five tests individually administered to 52 severely mentally retarded children. Each test was given three times. The first administration, Administration A, yielded a pretraining score. The second, Administration B, produced a posttraining score. A transfer score was obtained from the third administration, or Administration C.

In considering the results, the following topics are dealt with: comparisons of scores from the various test administrations; reliability of the tests; effects of characteristics within the population on test performance; adequacy of the tests in meeting the test criteria; selection devices for individual subjects; and the validity of the tests.

Comparisons of Scores from the Various Test Administrations

A series of analyses of variance demonstrated that highly significant differences were obtained for the group by the three administrations within each of the tests. Further, Administrations B and C of every test produced significantly higher scores than Administration A, and, with a single exception, scores from Administration C were significantly lower than those from Administration B. As a group, then, the subjects had learned in all of the situations provided, and were able to transfer the training to other situations.

Reliability of the Tests

Determining the reliability of the tests presented many difficulties, because of the influence of training and practice on the scores. Two methods were used for estimating, or more properly, for inferring the reliability of the tests. First, scores obtained by matching pairs of subjects were compared, to see whether similar individuals had performed in a comparable way. Second, the internal consistency of the battery was studied, both by inter- and intratest comparisons. It is recognized that further experimentation and analysis are needed for an adequate determination of reliability.

Comparisons of the Scores of Matched Subjects

The factors of age, sex, time spent in school, presence or absence of brain-injury, and intelligence were considered in pairing the subjects. Intelligence was measured by estimated IQs, described in the previous article. In brief, the estimate was based on the results of whatever standard tests could be used with the particular child.

Precise pairing was not possible, and only gross matching procedures were used. Sixteen pairs were obtained. Their performance on the separate test administrations was compared. Added scores from the same administrations of the different tests were also used in the comparisons. There were three added scores. A "sum of A" score was obtained by adding the scores made by the subjects on Administration A of each test. A "sum of B" and a "sum of C" score were produced by adding the various posttraining and transfer scores, respectively.

All of the correlation coefficients (r) between the added scores obtained by the matched pairs were significant. For the "sum of A" scores, the coefficient was .69. The "sum of B" and "sum of C" scores both produced coefficients of .84. On the separate test administrations, the following results were found: For the pretraining administrations, coefficients ranged from —.09 to .67, only two reaching statistical significance. For posttraining and transfer administrations, coefficients ranged from .29 to .79, being significant in seven of the ten comparisons.

Since the comparisons reported here are almost certainly minimal estimates of reliability, they tend to suggest satisfactory reliability for the posttraining and transfer administrations of the tests, and also for the battery as a whole. The comparisons were made between roughly matched, rather than identical individuals. It is reasonable

to assume that test-retest comparisons made with the same individuals would have produced higher coefficients, had the nature of the tests permitted the use of retest methods.

Internal Consistency

To study the internal consistency of the tests, scores produced by the same administrations of the different tests were intercorrelated; i. e., scores from Administration A of each test were correlated with those from Administration A of every other test, and so on. Ten coefficients (r) were thus obtained for pretraining, posttraining, and transfer performance, respectively.

Coefficients obtained between the various pretraining scores ranged from .08 to .52. significant in three of the ten comparisons. On the other hand, the coefficients produced by the posttraining scores ranged from .37 to .75, and those for the transfer scores from .29 to .70, significant in all cases. In the inter-test comparisons, then, a greater degree of consistency was found for learning and transfer performance than for the initial test scores.

Results of the three administrations within the same test were also compared. These correlations produced coefficients ranging from .47 to .95, all significant, and demonstrating a high degree of intra-test consistency. A consistent pattern was also shown by the analyses of scores reported earlier, which showed that posttraining and transfer scores were always markedly higher than initial test scores, and, with one exception, transfer scores were significantly lower than posttraining performance.

Effects of Characteristics Within the Population on Test Performance

The influence of five factors on test performance were studied; sex, age, presence or absence of brain-injury, time spent in school, and intelligence (as measured by estimated IQs). A series of analyses of variance showed that sex, age, presence or absence of brain-injury, and time spent in school did not significantly affect the scores of any administration of any test. On the other hand, intelligence was found to be highly pertinent to performance on every test.

It was further found that pretraining scores distinguished significantly between the bright and the dull groups on only one of the five tests. In contrast, both learning and transfer performance always produced highly significant differences between the two groups. Further, while the dull group often failed to obtain different results on the various test administrations, the bright group performed significantly better on posttraining and transfer administrations than on the pre-training administration of every test. These findings indicate that posttraining and transfer performance were more sensitive measures of individual differences in ability than was initial test performance.

Adequacy of the Tests in Meeting the Test Criteria

Eight criteria were established for the tests, before they were constructed and developed. In summary, these criteria required that the tests be suited to the abilities, ages, and possible verbal, manipulative, and experimental lacks of the population; that materials and procedures be adapted to the special problems of brain-injured subjects; and that the tests be interesting enough, and sufficiently short, to hold the subjects' interest.

The results suggest that the tests were within the subjects' abilities, since, at least as a group, the subjects were able to learn and transfer on all of them. It is also reasonable to assume that performance depended on abilities already sufficiently well-developed at the ages of the children, since age did not significantly affect the scores within the seven-year age range studied, (5-6 to 12-7). Allowances for possible verbal and manipulative handicaps were made in the construction of the tests, which required no verbal responses, and no manipulation of the materials on the part of the subject.

Adequacy in meeting the requirement of minimal dependence on past experience is difficult to evaluate directly. However, several of the findings may be relevant. The subjects had attended school for a period ranging from 1 to 37 months, a range which necessarily involves differences in experiences in many respects. Differences in experience are also necessarily involved in an age range of over seven years. However, neither time spent in school nor age significantly affected test performance. Whatever the reasons for these findings may be, it can be said that different experiences involved in several major experimental areas did not affect performance on the tests.

Since presence or absence of brain-injury was not relevant to test performance, the test apparently did not penalize the brain-injured group. It is emphasized, however, that neither the brain-injured nor the non-brain-injured group may have

been representative. Generalizations in this connection are, therefore, not warranted by the results obtained. The interest and cooperation of the subjects best attest to the appeal of the material and to the appropriateness of the length of the tests. The tests may not be the best obtainable for definitive experimentation with the method. However, they seem to have met the criteria established for them reasonably well.

Selection Devices for Individual Subjects

To suggest a possible way in which the method used in the study might be given practical application, selection devices for individual children, based on their test performance, were set up. The subject's added scores from the same administrations of the various tests were used; i. e., the "sum of A," "sum of B," and "sum of C" scores described above. These were chosen because of the evidence, already presented, on behalf of their reliability.

To set up the selection devices, mean and standard deviations were computed. Individuals were then divided by Z-scores into the following groups; a high group, made up of subjects falling in the upper 25% of the distribution, a middle group, comprising subjects in the middle 50%, and a low group, consisting of those falling in the lowest 25%. Three such divisions were made; one based on pretraining scores, another on posttraining scores, and a third on transfer performance.

The groups were then compared in terms of intelligence (as measured by estimated IQs). Analyses of variance showed that, in all cases, the high group in test performance was significantly higher in intelligence than the low and middle groups of test performers. With one exception, (on pretraining scores), the middle group in test performance was significantly superior in intelligence to the lowest group of test performers. These results give further evidence of a relationship between performance on the tests, and intelligence, as measured.

Validity of the Tests

The best and most direct method of validation would consist of follow-up studies, in which test performance would be compared with the later in-school performance of the subjects. That, however, is an extensive and a long-range undertaking, beyond the scope of a preliminary study. Nevertheless, it is thought that the results of this experiment show evidences of both logical and empirical validity.

Logical Validity

The tests were designed to approach educability through abilities to learn under instruction, and then to transfer the training. Thus, the tasks were planned to constitute a kind of "job miniature" test. In school, a child is placed in various learning situations, in which he receives instruction. That is the situation in which the "job" of training is accomplished, and few will deny that the abilities to gain from instruction, and to use what has been learned, are essential to success.

An obvious question arises here. The tests do not measure long-range learning gains. Are the short-term gains obtained by the tests significantly related to the long-range gains at which education aims? Again, follow-up studies would supply the best answer. However, the results are thought to offer a less direct and less definite, though defensible, reply.

Highly significant relationships, (reported below), were found between the test scores on the one hand, and Vineland Social Quotients, estimated IQs, and teachers' ratings on the other. These three measures were not merely short-range estimates. Estimated IQs correlated .91 with Stanford-Binet IQs (where obtainable), .72 with Vineland SQs, and were based on one or more standard tests in every instance. Teachers' ratings were based on actual experiences with the child's performance in various learning situations, and correlated significantly with Binet IQs (.51) and with Vineland SQs (.64). Since learning and transfer performance on all of the tests showed a high degree of relationship to all of these measures, it is reasonable to assume that more than short-range abilities were tapped.

Empirical Validity

Pearson product-moment correlation were computed between the test scores and three external validation criteria; Vineland SQs, estimated IQs, and teachers' ratings. Each administration of each test was correlated with the three criteria, producing 15 comparisons for pretraining, posttraining, and transfer performance, respectively.

In all cases, pretraining scores produced lower coefficients than did posttraining and transfer scores. Coefficients for pretraining performance ranged from .18 to .68, failing to reach significance in two instances. Coefficients for posttraining and transfer scores ranged from .43 to .78, and from .29 to .78, all significant, beyond the .001 level of confidence in 28 of the 30 comparisons.

A significant relationship between test performance and estimated IQs has already been shown by analyses reported in preceding sections. When subjects were divided into groups on the basis of their test scores, significant differences were found in the estimated IQs of the groups. Similarly, when subjects were divided into bright and dull groups according to their estimated IQs, significant differences in their test scores were obtained. If the group was low on one of the variables, it was also low in the other. If it was high on one of the variables, it was correspondingly high on the other.

This was a preliminary study, in which the chief emphasis was on method. The reliability of the tests was not adequately determined; the need for satisfactory validation remains; and far more extensive experimentation is needed. Meanwhile, the results appear to be promising and tend to substantiate the basic hypothesis of the study — that the educability of the severely mentally retarded child can be inferred from his responses in situations designed to study abilities fundamental to all education; namely, the ability to learn from instruction, and to transfer the training to other situations.

Mentally Retarded and/or Aphasic[1]

BERNARD B. SCHLANGER, Ph.D.

"Seek and ye shall find" is the poignant slogan of the frustrated parent desperately seeking the magic key to the cure of his brain-injured, nonspeaking child. One door after another is tried as each of many disciplines struggles with the problem of the speechless child who functions on a retarded level. For some of the children the doors opening on the corridors of normalcy remain firmly locked. For others, some hope based on discipline indecision or terminology abuse exists. The search goes on as each diagnosis seemingly locates the door for the parents; in the majority of instances, the key does not even fit the keyhole.

An example of the difficulties encountered in obtaining definite answers is Bobby, an eleven year old boy who was recently enrolled at The Training School at Vineland. In his parents' search for the magic key he has been seen through the years by a long list of experts. Examined frequently since infancy, these are a few of the things that stand out in the parents' minds as reported in his case history file:

Pediatrician — It's something in his head. Time will tell.

Psychiatrist — Infantile autism; uneducable.

Psychiatrist — Post-encephalitic behavior; uneducable.

Neurologist — Cerebral palsy, ataxic type with mixed dominance. Suggested binding one arm to establish hand dominance. Speech would follow once this was accomplished.

Neurologist — A case of "wet brain." Examinations indicated that the dura meter between the brain and skull was broken and water pressed on the brain. Dehydration recommended. After three months, no improvement demonstrated.

Neurologist — Severe brain damage present before birth.

Psychologist — Seriously retarded.

Psychologist — Seriously retarded and uneducable.

Speech center where he was enrolled from 7½ to 10½ — Aphasia and/or emotional disturbance with a potential I.Q. of 75. He was disenrolled with a vocabulary of 50 words.

Each individual saw this child as the blind man of India groping at the elephant. The disparate opinions, all with some element of truth, reflect discipline orientation, and, as is so often the case, were probably arrived at under conditions that limited the interview and diagnostic period. After many years and many investigations, the parents surmise that they have a brain-injured child who is or has been emotionally disturbed, aphasic, retarded, perhaps educable. They still seek the magic key, the "cure" as it were.

Bobby is a handsome, well-developed boy. Tests given over the period of one month indicated a Porteus Maze level of 4 years and a WISC of 10-9. Current intellectual functioning is estimated at an M.A. of 7 years; the I.Q. is 65 or more based on Binet performance items and the Merril Palmer Scale. The VSMS Social Quotient is 31.

Bobby solves puzzles easily, rhythmically, and logically, humming while he works. He reflects ability to benefit from previous experience, and tolerates failure well. Thus, according to these psychological reports, there seems to be no evidence of psychosis nor of severe emotional disturbance, for while adjustment is poor, it is positive and he is generally cooperative and friendly. However, attention is fleeting and he is quite distractible.

Speech and language are severely delayed. No spontaneous speech is used. Motor control of speech musculature is adequate; hearing appears normal. He repeats a few monosyllabic words and makes vague, inconsistent attempts to repeat words in a subdued voice lacking in intensity. Comprehension is also inconsistent, with responses indefinite in selecting pictures, for example.

What differential diagnosis can be made on Bobby? There is a central nervous system pathology of undetermined loci. There are symptoms of expressive-receptive aphasia. Prognosis would indicate a hidden potential that requires a highly personalized motivational treatment. An optimist might estimate that his mental defectiveness is

BERNARD B. SCHLANGER, *formerly Chief of the Speech and Hearing Division of The Training School at Vineland, New Jersey, is now Director of Speech and Hearing Clinic, West Virginia University.*

functional and that he has a borderline potential. Since his personality is relatively well-integrated considering his age and pathology, the question might well be asked: Were he able to communicate, would he continue functioning on a retarded level? If we say he is mentally retarded, not aphasic, we have said very little, since mental retardation is not an entity similar to a broken arm, but a variable cluster of abnormal functionings, a symptom associated with underlying deviations, aphasia for one, which may not of themselves be a sufficient condition to result in this symptom. Can it be said that he is both mentally retarded and congenitally aphasic? In this way we do not buoy up our own and the parent's flagging spirits by implying that should the linguistic disorder be alleviated, the magic key, the diagnostic word, will turn the locks of the door opening on the corridors to normalcy. There is an optimism engendered in diagnosis by the use of the word "aphasia" alone that clouds the issue and builds up false hopes.

Aphasia in children almost defies description and certainly defies definition. Practically speaking, the congenitally aphasic child, a child with specific language deficiency with confirmatory evidence of cortical damage, is a mentally retarded child. The "true" aphasic child is considered one with an untapped potential, an uranium mine of virgin intelligence waiting to be mined by the right educational and psychological tools. And just as difficult to discover as an uranium mine. While the etiology of congenital or infantile aphasia as a pure concept has not been definitely established, by a process of exclusion a theoretical rationale has been set up. Nevertheless, so exclusive is the membership that if we eliminate mental retardation and emotional disturbance from our diagnostic description, very few children with severely delayed language are eligible. We find a great deal of overlap and interaction. In an attempt to simplify, we are saddled with a useless oversimplification.

The failure of a brain-damaged child with seemingly good potential to develop speech is frequently as frustrating to the therapist as it is to the young subject. Because of the child's difficulties in language development and his atypical behavior, the short cuts of the diagnostic tests offer few clues to the child's potential functioning.

To understand his communication disorder and map out a program geared to his unique problems, the child needs intensive investigation over a longer period of time than the one or two meetings usually accorded the "normal" speech defective. In residential centers such as The Vineland Training School, such long-term investigations are possible. After several years of observing and diagnosing retarded children who are aphasoid, I have come to the conclusion that the more one learns, the less one knows. There is still a hesitancy in accepting congenital aphasia as pure concept. The retarded functioning, the emotional difficulties, and the communication disorder and delay found after C.A. five to six years are interwoven into the whole cloth and are often inseparable into their individual yarns. The more we work with abstract symbols such as congenital aphasia and mental deficiency, the more cautious and guarded become our statements.

Perhaps we should consider using levels and types of congenital aphasias with appended modifying phrases. For example, using the descriptive phrase "mentally retarded, severe congenital aphasic" indicates that there is linguistic disorder of the nature of severely delayed language development; that the language deficit is due primarily to brain damage, occurring prior to the full development of oral expressive language; and that it is influenced by and augments the mentally deficient behavior which has resulted from the same cause or causes which handicapped communication. It also indicates that a) if expressive language exists, it is markedly inferior to the child's comprehension, social maturation, and intellectual level; b) that innervation of the speech musculature is adequate for sound producing; c) the hearing end organ is normal for speech reception; and d) behavior while indicating organicity or maladjustment is not autistic.

There is nothing revolutionary in this. All that is advocated is a broader, more realistic use of the term aphasia in reference to children, indicating that retardation is present and possibly permanent. While the aphasoid condition is partly remediable, the retardation remains.

Excluding retardation as a factor in congenital aphasia is confusing. Aphasia may be associated with mental retardation in the same way that severe behavioral disturbance is. Usually aphasia and personality disturbance are considered secondary factors to the retardation. Many mentally deficient children, particularly lower grade subjects, are without speech, but the low level of functioning leaves no doubt that they are primarily and almost principally mentally defective. On the other hand, aphasiacs are retarded education-

ally, socially, and usually emotionally, but much of the retardation is considered partially ameliorable. This may be designated "pseudo-retardation" if it is alleviated by special developmental and motivational training techniques. In most instances this is not always the case, and relatively few children with severe linguistic disorders have been encountered who have ever approached the potential predicted for them.

Two 15 years old boys fit the picture of predicted normalcy which has not yet, and won't, come to pass. In both instances, cerebral pathology arose from rubella in the first trimester of pregnancy. The speech diagnoses after several years of study in one instance and more than one year in the other were: Moderately severe aphasia, motor-receptive, complicated by a hearing loss, moderate retardation. The linguistic disorder in both cases was demonstrated by the presence of echolalia and the perservation of words and phrases, jargon flow, and difficulty in recalling names. Both boys recognized printed words and wrote sentences, but did not always grasp the meaning of what they read or wrote. Both had relatively normal pitch and inflection patterns indicating that the hearing loss (50db), while contributory, was not a primary factor in their speech and language disorder. Following six years of therapy in one instance and more than a year in the other, only limited progress had been made. Single words and sentences were used, but they were not clear. Prognoses for improved communication are poor. The subjects displayed abilities in some areas, e. g. farm work and domestic activities, but basic functioning was and will continue on a retarded level and will remain dysphasic. The predicted potential of borderline mentality is now remote. For these two boys, the linguistic handicap seems permanent, and slow learning unalterable.

Another child whose optimistic prognosis of several years ago remains unfulfilled is a fifteen year old girl, whose history indicated brain damage at birth and convulsions after. She could make all individual sounds within normal limits, but demonstrated difficulty in articulating words longer than two syllables. In reading she was familiar with phonetics, but made errors even though she apparently knew what she wished to say. She read "lamp" as "light"; "pail" as "bucket"; "feather" as "wing". Frequent misnaming occurred: "dog" for "squirrel"; "cow" for "sheep"; "moon" for "sun". Although she seemed to know the correct meaning internally, the wrong word came out in both speaking and reading aloud. The first word that came into her head might be used. Then she reacted disgustedly, striking her head, and exclaiming that she knows nothing. There was a complete lack of confidence and much confusion in all her linguistic activities. Many of the behavior characteristics of the adult aphasic were seen in this girl's language disorder and behavior. In this instance, as in the preceding two illustrations, time has demonstrated that moderate mental deficiency will remain.

With these as well as many other examples who have been in our speech program, we have become a mite more conservative. We do not anticipate the progress an aphasic diagnosis leads one to expect. Take for example two 11 year old boys both with histories of brain damage from trauma during and after birth. Both children have been diagnosed as "aphasic" by authorities. They have had several years of therapy. Painfully slow progress has been achieved. They can make most individual sounds; they seem to know more than they can say and can pick out printed words; but responses are erratic. Vague undifferentiated gestures and modified screams are typical communication modes. The slowly developing ability in language is paralleled in their achievement and intelligence test results. As a matter of fact, I.Q.s which were in the low seventies are now in the sixties. The underlying organic etiology, limited communication assets, and aberrant behavior stemming from these, seriously impedes even the acquisition of a less than adequate speech ability. Take away their aphasic symptoms, clear up the behavioral maladjustment, and one still finds a retarded child.

Similar comment can be offered in regard to three post-encephalitic children. The oldest, a handsome boy of 10 years, had developed some expressive language when measles encephalitis occurred at 24 months. He lost all language. Today there is no spontaneous intelligible speech, although he makes all sounds. He responds to certain stimuli, for example, (sh) to "shoo fly", (s) when a radiator is indicated, "dang-dang" when he shoots a gun. Responsiveness to communication indicates that he hears, but understands inconsistently. The other two post-encephalitic children are demonstrating progress, but it is painfully slow. One, a girl eight years old, used jargon until a little over a year ago. Speech is now clearer, sounds are produced satisfactorily, words are understandable and sentences are a mixture of

jargon and intelligible phrases. The other, a boy who is also eight years old, has just mastered the two word sentence and demonstrates more potential and progress in the past few months than at any similar period during the last four years. These two young aphasiacs and others to whom I have referred are still severely delayed in language development and for the most part will not live up to their predicted potentials, despite their late spurt in language development.

These few examples could be multiplied several times in The Training School's population . . . take away the language disorder and it is most probable that the child will still function as a slow learner, perhaps attaining test mental ages as high as eight years through ability in performance items, but not much beyond that point. We all recognize that there are difficulties in endeavoring to classify or categorize when such inherent variability exists as is found among brain-damaged children. The majority of cases with brain damage do not fit neatly into a format that implies a secure knowledge of the etiology, therapy procedures and the prognosis. The differential diagnosis between congenital aphasia, emotional disturbance, and mental retardation is not simply that of ruling out one condition or the other, but of **endeavoring to estimate each one's relative importance.** A crystal-clear differential diagnosis in cases of mixed retardation, aphasia, and behavior disturbance is exceedingly difficult because of overlap. The descriptive terms are semantically confusing. Even the most clinically intuitive individual encounters problems in separating elements of abnormal behavior in children. When response to specialized intensive therapy reveals little progress, or gains are minimal so that the prognosticated capacity is unattainable, the child is often wrongly designated as primarily emotionally disturbed or mentally retarded and not aphasic.

Congenital aphasia as a pure distiilate exists principally on paper, with classification on the basis of some theoretic rationale. It is only one aspect of the symptom cluster demonstrated by some children with CNS pathology. Practically, we might admit that there are degrees of congenital aphasia, plus! . . . plus a range of behavior defect . . . plus levels of mental retardation.

1. From material originally presented by the author at the November, 1957 meeting of the American Speech and Hearing Association in Cincinnati.

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Study of Sheltered Workshops for the Mentally Retarded[1]

BERNARD F. NIEHM

Introduction

Development of sheltered workshops for the mentally retarded is relatively new, although the idea of sheltered workshops is not new. Sheltered workshops for the handicapped have been in existence and have proven successful over a long period of years. As early as 1840 sheltered employment for the physically handicapped existed in the United States, but their real rise in prominence did not come until the early part of the present century. Today there are many sheltered workshops, primarily for the physically handicapped. While aid to the physically handicapped was given wide attention, little was being done to help the mentally retarded. Even with state recognition and aid to schools for the establishment of special classes for the mildly retarded (educable I.Q. 50-75 on Stanford Binet), little thought was given to what these children would or could do when they became adults.

As recent as within the last ten years the group of children now considered trainable and classified as moderately retarded (I.Q. 30-50 on the Stanford Binet) were excluded from public school on the basis of not being educable or trainable and therefore not able to benefit by a school program. The only course of action the parents of these children had in many states was (1) to keep the child at home without benefit of school or group training; (2) to place the child in private training schools, if the funds were available and the child was accepted by the school; or (3) to attempt to place the child in already understaffed and overcrowded state institutions. Even many of the retarded children who were labelled "educable" were destined to sit in classrooms without special help until they became old enough to drop out of school or presented a problem and were dismissed.

Recent years have demonstrated a tremendous change in society's attitude and approach to the problems of mental retardation. Local parent groups have sprung up all over the country. National and state Parent Associations have added impetus to the movement to help the mentally retarded. Public and private agencies and institutions have proven to society through research programs that many of these children can live happy, useful and productive adult lives within their community (under sheltered conditions) or within residential and institutional homes if they are given the necessary training and opportunities to live and work with others. Only a few will be able to take their place in competitive industry, but many can learn to do simple manual skills. Thus, with a meaningful school and vocational program during the school years and a planned adult work program, these children might find it possible to live satisfying adult lives.

Purpose of Study

Assuming that a school and pre-vocational training program is or can be provided for most retarded children, the next step must be to provide a program to meet the needs of these children when they reach adulthood. A sheltered workshop may be at least a partial answer to providing a program for the mentally retarded adult. The sheltered workshop would be a place where these adults would have an opportunity to work and feel they are useful members of society. For many the workshop would be terminal employment. For others it would be additional vocational training to gain the necessary work experience and skills which might equip them for employment in the community.

Thus within recent years the tremendous growth of interest in helping the mentally retarded adult has resulted in attempts to establish workshop centers. However, sufficient time has not elapsed to allow a complete evaluation as to how effectively the sheltered workshop has been or how well it will meet the needs of these children. Many community groups have organized or are in the progress of organizing sheltered workshops, but to date there is relatively little literature on the success or problems involved in planning and organizing a workshop.

It is the purpose of this study to (1) gather as much data as possible about existing workshops; (2) evaluate this information with the purpose of finding how successful they have been and discover basic factors and problems involved in the organization of this type of program; (3) set up a list of criteria and steps deemed necessary to the successful organization of a sheltered workshop; and (4) use this information as a guide in initiating a sheltered workshop.

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Procedures Employed in Securing Data

What are some of the problems involved in the organization and operation of a sheltered workshop for the mentally retarded? Are they successful? What type and size of building is needed? What type of equipment is necessary? What are the qualifications necessary for admission? Are the workers paid and how much? What are some of the types of work successfully carried on? Where does financial support come from?

These are a few of the questions that must be answered before a workshop can be successfully established. Because of the lack of literature, the procedure used in this study has been to gather information (from groups who are actually operating sheltered workshops at the present time) which will answer some of the above questions and indicate problems involved. The method of research used can best be described as the Normative-Survey method.

Two types of agencies conducting sheltered workshops were contacted: (1) those having a workshop primarily for the mentally retarded, and (2) those having a workshop primarily for the physically handicapped but also serving the mentally retarded. Other sources of information were individuals and organizations that are or have been concerned with the mentally retarded and the problem of providing sheltered employment for the handicapped.

Since it was physically and financially impossible for the writer to visit each place and observe first hand, two techniques for securing data were used: (1) questionnaires were mailed to all sheltered workshops for the mentally retarded that were known to the writer and a number of other sheltered workshops which might include the mentally retarded in their program, and (2) the other technique used in obtaining data was actual visitation and interviewing of staff members. Actual visitation and personal interview were used in only a limited number of situations.

Limitations of the Study

As had been previously mentioned, there is a very limited amount of factual information available concerning sheltered workshops for the retarded. The sheltered workshops established primarily for the retarded are few in number. Another very important limitation of the study has been the time factor. This means that many of the workshops primarily for the mentally retarded have only been in operation a short time, some of them less than a year. Therefore, it is difficult to evaluate whether some of the practices now in use are of real value. The study will cite some of the needs and problems that did arise and must be solved.

Type of Questions Used

The basic problem here was to determine what questions should be asked to obtain the necessary data on the planning, organization, and problems involved in the establishment and operation of a sheltered workshop. Twenty-nine items were finally chosen as the minimum number that could be used to cover the major areas important to the study. The major areas were: (1) information about the physical features (size, equipment, type building); (2) occupational information such as kinds of work, number of workers, hours, wages; (3) guidance and counseling of workers, admission requirements, (4) administration; (5) community aspects; (6) transportation; and (7) recreational facilities, if any.

Summary of the Findings

A study of the information compiled indicates there were three types of workshops involved in this study. They are identified as to type by letters A, B, and C.

Type A workshops were primarily for the mentally retarded and consisted almost entirely of the mentally retarded.

Type B workshops were not established primarily for the mentally retarded but have provided special arrangements and facilities within the workshop to meet the needs of the retarded.

Type C workshops were established primarily for the physically handicapped. They accept the mentally retarded into their program but did not make any special provisions for them.

Type A workshops have been on the average in operation for the shortest period of time. Type B and C on the average have been established for a much longer period of time.

With the exception of a few, all served an area of over 200,000 population. While the majority owned the buildings housing their workshop, the others rented the buildings being used.

The amount of floor space used by the workshops varied from 480 square feet to 15,000 square feet. Type A workshops were on the average

smaller. The type of buildings used to house the workshops did not follow any specific pattern of construction but were in most cases one or two story concrete or brick construction. Some used an entire building while some of the smaller workshops were confined to one or two rooms of a school, church or similar building.

The type of equipment needed in any specific workshop was dependant upon the ability of the workers to do different types of work. Hand and power tools for craft and carpentry work, painting equipment and sewing machines were mentioned with the greatest frequency.

The number of workers and trainees in any one shop ranged from seven to thirty while the average number in any one shop was approximately seventeen. The majority of the Type A workshops had mostly trainees (they were not yet considered workers). This may have been due in part to the short time of actual operation. The payment of tuition by trainees varied with some not requiring tuition and others charging tuition ranging from $15.00 to $40.00 per month.

The workshops, almost without exception, had a five-day work week with the hours per day worked ranging from three to eight hours depending on the individual and the amount of work available. Some workshops were only able to pay $.10 per hour while others which were well established, paid as high as $1.00 per hour (the high-paying shops generally had a high percentage of physically handicapped workers). Many of the workshops used piece work rates as well as hourly rates.

Requirements for admission varied. The minimum age requirements ranged from fourteen to eighteen years. The majority of workshops had no minimum age requirements. Intelligence requirements also varied. One Type A workshop gave minimum mental age of three years, while five Type B and C workshops specified 60 to 70 I.Q. as the minimum requirement. In general, the main requirement seemed to be the individual's ability to profit and get along with others. Most of the children in Type A workshops were 60 I. Q. or below.

This study shows that approximately one half of the workshops having both the physically and the mentally handicapped favor keeping the mentally retarded grouped as a separate unit within the workshop, while the other half favor a program whereby the mentally retarded are integrated in the job areas with other types of handicapped persons. Some of the returns from workshops solely for the mentally retarded state that the workshop should be limited to mentally retarded or the mentally retarded will gradually be pushed out in favor of the more intelligent and able physically handicapped person because of their greater productivity and lesser need of supervision.

The lunch program varied with some workshops having cafeteria service and others having the workers carry their lunch. Some type of recreational activity was supplied by all workshops either during the noon hour or after work. Picnics, parties, dancing, music enjoyment and games were most frequently mentioned. Many of the workshops depended on volunteer help in providing recreational activities.

Transportation seemed to be a problem in the larger cities and where long distance travel was involved. Workers were transported by public transportation facilities, workshop bus or station wagon service, and by parents. No one method seems to be superior to the others. There was a difference of opinion as to whether supervision is necessary. Some found supervision to and from work was unnecessary if a short training period is first provided.

The work done in the workshops can be divided into three groups: (1) sub-contract, (2) repair or salvage, and (3) production of new products. Sub-contract and new production were carried out most successfully when of a simple repetitive nature. Sub-contracting was done by more workshops than any other type work. Some of the major problems related to the work were keeping enough sub-contract work ahead, availability of materials, and inability to get a fair price for the time spent on handmade articles. Most of the workshops had their own sales outlet.

Provisions for counseling and placement are not yet adequate. Some of the workshops have trained staff to do counseling, others depend upon local and state agencies for help. Clinics, hospitals, schools, health and welfare departments, and family physicians were some of the other sources of assistance.

The size of staff needed depended on the kind of work carried on and the number and type of workers and trainees in the workshop. The ratio of workers and trainees to staff members is approximately one staff member to every seven

workers or trainees. Most of the workshops also had volunteer help. Qualifications listed as important for staff members to possess were: (1) professional training and education, (2) background in business and industrial work, and (3) love, patience, consideration and understanding. Competing financially with industry and business establishments for professional help seemed to be a major problem. Finding persons who were interested in this type of youngster was a problem along with a shortage of social workers and occupational therapists.

It is impossible to know the yearly cost of a proposed workshop program or the extent of self-support before a workshop has actually been in operation. Factors such as number of workers, degree of handicap, kinds of work that can be carried on successfully and availability of work will help determine how self-supporting the workshop will be. The study indicates that few of the workshops were self-supporting, and these usually were workshops that had the physically as well as mentally handicapped workers. The workshops limited only to the retarded were usually only able to meet the cost of material and the workers payroll. It may be that while Type A workshops are only self-supporting to a limited degree at the present, perhaps as they become better established in the communities they will become more self-supporting.

Principle sources of funds for the operation of workshops were tuition from trainees, sale of products, sub-contract work, contributions, public drives (such as Community Chest and Easter seals) and civic organization projects. While Type A workshops obtained most of their financial support from tuition, contributions, public drives and civic groups, the majority of Type B and C workshops obtained the bulk of their financial support from the sale of products and sub-contract work.

The importance of community support has been evident throughout the study. All questionnaire returns were answered with "yes" to the question of whether they felt their workshop had community support. When asked for additional comments, many stressed the importance of parent and community cooperation and understanding if the workshop were to be a success.

Conclusions and Recommendations

Present practices and opinions concerning sheltered workshops vary considerably. The data presented in this study indicates a need for research studies to be made of experimental workshops for the mentally retarded. A review of the available literature and the data obtained from this study indicates that many of the mentally retarded can be gainfully employed if given the necessary help and training. (It is important that we do not jump to the conclusion that this is the answer for all children. There are perhaps as many that will not benefit to the point that they can be considered gainfully employed.) Many of the problems of the retarded are of an emotional or social nature. An important part of any workshop program will be to give them opportunities for social growth. A recreation program should be included in any workshop program. Many social skills can be learned through well-planned recreational activities.

The study indicates that a joint workshop plan where the workshop would have facilities for both the mentally retarded and physically handicapped would be most feasible from the financial standpoint. Under a joint plan both groups would get the benefit of the same staff of specialists. This type of program would seem especially suited to the smaller cities where there are not enough of either the physically or mentally handicapped individuals to organize separate programs. The major drawbacks to a joint program would be: (1) the difference in the kind of complexity of work each group would be capable of which in turn would influence the kind and amount of tools needed; and (2) care would need to be taken to ensure that the mentally retarded are not forced out in favor of the more productive workers which we would find in the physically handicapped group. This could happen if production and financial gain are allowed to become the major objectives.

A ratio of seven workers and trainers to every actual workshop staff member seemed to be satisfactory. Volunteer help was also used in both the workshop and recreational phases of the programs.

All means of transportation posed some difficulties with no one means being the best. Supervision in traveling was considered unnecessary by many if the worker is first given a training period in going to and from work.

Provisions for counseling and guidance are not adequate and there is a need for more specialists.

Understanding and love of the retarded child was considered as important a qualification for staff members as educational and industrial background.

Workshops reached a higher level of self-support when physically handicapped are included in the program.

The success of any workshop program seemed to be dependent upon the amount of community interest and support. Before any workshop program is organized, the community must be made aware of the existing problems and the need for this type of program within the community.

Recommendations

The recommendations are based upon the data obtained in this study and will be subject to change as time and further studies of experimental workshops give us additional information upon which to base a workshop program.

1. The workshop program will not be the answer for all mentally retarded persons. Many will be unable to meet the requirements of the workshop or unable to profit by the program.
2. The first step necessary in workshop planning is to present the idea to as many community groups as possible. Members of business, industry, medical, health welfare, and other service organizations need to be brought into the planning phase. Success hinges on their interest and support.
3. A survey of the community to be served should be made to determine the exact number of persons who are in need of a sheltered program and what their capabilities are.
4. Studies should be made to determine the types of work that might be available in the community which could be successfully carried on by the mentally retarded.
5. If a joint workshop for the physically and mentally handicapped is contemplated for financial or administrative reasons, care should be taken to have each group a separate unit with its own supervisor and any special facilities necessary.
6. Work for the mentally retarded must be less complex than that for the physically handicapped.
7. Sub-contract and production of new materials will meet with the greatest success if it is of a simple,repetitive nature.
8. Hand tools for craft and carpentry work, painting equipment, and sewing machines have been mentioned with greatest frequency of use in other workshops, but final analysis of the type tools and equipment needed will depend upon the ability of the workers to use the tools.
9. Candidates for the workshop should have pre-vocational training. However, this may not always be possible.
10. The trainees and workers should be on trial at all times in the workshop and subject to removal if a danger to self or others.
11. A minimum age requirement should be eighteen with preparatory training for the sixteen to eighteen year old group.
12. Time worked per day should not exceed seven hours. This time should include a supervised lunch period and recreational activities. These lunch or rest periods should be used to further social skills and behavior.
13. Intelligence requirements should not be based too extensively on an I.Q. rating, but upon the ability of the person to profit from such a program.
14. Many of the workers may be able to travel without supervision, but a training period in traveling from home to work should be given.
15. Tuition would seem advisable for trainees.
16. The cost of the program will be high and must have community financial support. Seldom are workshops able to meet all expenses. (At least this seems to be the experience so far.)
17. Staff-pupil ratio should be kept small. The average in present workshops seems to be about seven to one, with the need for volunteer help.
18. Staff qualifications should be professional training, experience in business and industry, and, most important, an understanding of the retarded person.
19. The workshop should have as a secondary aim opportunity for social growth.

1. This study was conducted at Ohio State University as part of the work done by the author to complete a Master of Arts degree in Special Education. The study was completed in 1955.

BOOK REVIEWS

"Barbara: A Prologue", Willard Abraham. New York, Rinehart & Company, 1958. 94 pp.

Keeping pace with the growing trend towards better understanding of mental retardation by parents of such children and the public alike, this book renders a service far beyond its small size and unpretentious title. It was written by a parent, the father of a baby girl born a mongoloid, and tells in plain terms what the mother and father thought, said and did when their pediatrician first told them the news the day after birth and during the difficult weeks following.

What makes this recital an outstanding contribution to the literature is its direct, knowledgeable approach and the many helpful suggestions. By coincidence, Mr. Abraham in his position as professor of education at Arizona State College, had taught a five week's Workshop on the Education of the Exceptional Child the summer before their baby was born. He was well versed in many of the problems facing the retardate and the parent from the professional and lay point of view, and although this understanding and appreciation in no way ameliorated the tragic news, it served well when he started to write "Barbara" in the hope that other parents and society in general might benefit.

Throughout the book the author has quoted passages from other writings that he and his wife found rewarding and helpful as they struggled with the cold fact that their daughter would never be normal. The decision on whether to place the child in an institution or keep her at home; the relationships with friends and relatives in the early days when something had to be said; and especially the contact with doctors and others working with the problem daily go a long way in giving sound comfort and advice to others facing the problem for the first time.

In his closing pages, Mr. Abraham presents a beautiful and logical statement on what he feels is the contribution made by these little ones.

Without excess emotion, without anger or bitterness, but always with strength and hope, the story is told. It deserves the highest praise.

D. S. C.

"One of Those" by Sophia Gant. New York, Pageant Press, 1957. 88 pp.

The question of committing a mentally retarded child to an institution or keeping him at home is one of the more difficult decisions the parents of these children must make. No rule can be laid down, and the best advice is still too little.

The Gants decided to keep their child at home. Born a mongoloid, the sixth child in an other-wise normal, healthy family, little Peter is now twenty years old, and the list of his accomplishments is stirring tribute to a mother's love. He reads and writes, plays the piano, violin, coronet and mandolin, and in general is remarkable proof of what intensive care, training and love can do for "one of those" children.

His mother, a former school teacher and author of this book, writes simply and with restraint, giving the reader an all-too-brief outline of the various schedules, methods, and goals she instituted in her determination to develop her son to the maximum of his potential. It is a lonely road, and movingly Mrs. Grant tells how her faith in God has sustained her through the long years of patient training, a faith that she has transmited to her son and from which he too gains strength.

In giving Peter formal schooling, Mrs. Gant used the regular text books and went so far as to set up an actual school room complete with blackboard and desks. A bell was rung at the change of periods, and the hours were laid out in a formal program suited to Peter's needs and capabilities.

For those parents wondering about teaching their retarded child at home, this book would make valuable reading.

D. S. C.

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